

## THE IDENTITY OF *SELIDOSEMA ZYGOPHORA* LOWER, 1893 (LEPIDOPTERA: GEOMETRIDAE: ENNOMINAE)

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### Abstract

The Australian *Selidosema zygophora* Lower is shown to be a junior subjective synonym of *Pseudocoremia suavis* (Butler) from New Zealand. *P. suavis* is a very common insect in New Zealand and a significant pest of *Pinus radiata* plantations. In view of the fact that the two specimens mentioned by Lower are the only ones known from Australia it is conjectured that they are mislabelled specimens from New Zealand and it is recommended that the name should be omitted from the Australian list.

### Introduction

*Selidosema zygophora* Lower, 1893 was described from two specimens collected by Mr W.H.F. Hill at Croydon, Victoria. One of these specimens was given to Oswald Lower by Hill. The Lower collection in the SAMA contains a single specimen labelled as *Selidosema zygophora*. In the preparation of the *Checklist of the Lepidoptera of Australia* (McQuillan & Edwards 1996) this species posed a problem. There were no conspecific specimens in the ANIC nor were specimens subsequently found in the MV (Marriott and Hewish pers. comm.) or other collections examined. The syntype in the SAMA was the only known extant specimen and the specimen retained by Hill appeared to be lost. The species clearly did not belong in the genus *Selidosema* (a European and North African genus with type species *Geometra plumaria* [Denis & Schiffermüller, 1775]) (Scoble 1999) and was equally clearly not closely related to any other known Australian taxon. In the absence of further information it was placed in an unknown genus at the beginning of the Ennominae, Boarmiini.

Interest in the species revived in the early stages of preparation of the Geometridae section of *Moths of Victoria* where clearly the species had to be accounted for. By coincidence a chance examination of Hudson (1928), in which pl. XVI fig. 18 depicted a moth very similar to a photograph of the syntype of *S. zygophora*, led to the hypothesis that *S. zygophora* was in fact a New Zealand moth. This illustration was identified by Hudson as *Selidosema suavis* Butler, 1879. The genus *Pseudocoremia* Butler, 1877 (type species *Selidosema fragosata* Felder & Rogenhofer, 1875, a junior subjective synonym of *Larentia productata* Walker, 1862) was adopted in New Zealand for *P. suavis* and its relatives about 1975 (Dugdale 1975).

This tentative identification was subsequently checked by dissection of the syntype and comparison with identified modern New Zealand specimens.

The following abbreviations are used for the Australian National Insect Collection (ANIC), the Museum of Victoria (MV), the New Zealand Arthropod Collection (NZAC) and the South Australian Museum (SAMA)



**Figs 1-4:** (1) Adult male, *Pseudocoremia suavis*, Mahinapua, NZ (NZAC) (Wingspan 31mm); (2) Lectotype *Selidosema zygophora* (SAMA) (Wingspan 32mm); (3) Male genitalia (aedeagus omitted), *P. suavis*, Laingholm, NZ (NZAC); (4) Male genitalia (valvae broken and aedeagus omitted), Lectotype, *S. zygophora* (SAMA).

### Identification

The genus *Pseudocoremia* contains a suite of at least 27 New Zealand species (Dugdale 1988, Stephens & Gibbs 2003, Stephens *et al.* 2007), one from Norfolk Island and one from the Chatham Islands. Characters which permit the identification of *P. suavis* include the markedly outward bend in the median lines of the forewing when approaching the dorsum, these lines are darker near the dorsum, the male genitalia (the form of the valva, the processes on the valva and the juxta) and the form of the fovea (Dugdale pers. comm.; Stephens 2001). The syntype of *S. zygophora* and the modern

New Zealand specimens of *P. suavis* (Figs 1-4) agree very closely in these features except that the syntype has had the tips of the valvae damaged at some time in the past. These specimens also agree closely with the illustrations of *P. suavis* male genitalia given by Stephens (2001). The agreement of these characters leaves no doubt that *P. zygophora* and *P. suavis* are conspecific. Fortunately the name *P. suavis* has 14 years priority over the name *P. zygophora*.

### Type

In order to fix the identity of *S. zygophora* Lower the syntype labelled "Sel: zygophora Lower 2497" "Type" "2497 Caulfield" "Specimen photog for Checklist Aust. Lep. Film 28/11" "SAMA Database Number 31-001789" in the SAMA, Adelaide, is here designated as LECTOTYPE.

### Discussion

Lower's unpublished collection registers, both the superseded one and the final one, contain the entry "zygophora" without further information and without a Lower species number. However the labels on the SAMA specimen do have a Lower species number, namely 2497. It is noteworthy that the locality label of Caulfield on the specimen also bears Lower's number so it is not an original locality label received from Hill. In his original description Lower did not give "Caulfield" which is on the label but gave "Croydon, Victoria". This discrepancy adds credence to the hypothesis that the specimen may be a mislabelled New Zealand specimen. However Reed (2002) mentions no place in New Zealand of the name of Caulfield although there is a Croydon beside the Hokonui Hills and there is a nearby forest remnant, Croydon Bush, in Southland. Hill lived at Windsor, Victoria, which is near Caulfield and both are southeast of the City of Melbourne, but Croydon is some distance away to the east of the City, although Hill did collect widely on what was then the eastern outskirts of Melbourne and near Ballarat.

*P. suavis* is a common widespread species found throughout New Zealand except the Subantarctic Islands (Hudson 1928, Dugdale 1958). Its biology has been recorded by Hudson 1928, Dugdale 1958 and Berndt *et al.* 2004, and it is known to feed on a wide range of trees and shrubs including *Kunzea*, *Leptospermum*, *Metrosideros*, *Nothofagus*, *Phyllocladus*, *Podocarpus* and the introduced *Cupressus*, *Eucalyptus*, *Pinus* and *Pseudotsuga* among many others (Dugdale 1958). In New Zealand it is a significant defoliator of plantations of *Pinus radiata* with periodic outbreaks causing severe damage (Zondag 1968, White 1974, Kay 1983). It is not confined to forests and is also common in suburbia.

### Conclusion

*S. zygophora* is a junior subjective synonym of *P. suavis*. In view of its ubiquity and pest status in New Zealand it is very unlikely that a cryptic population has persisted in Melbourne for 117 years without rediscovery. It is

therefore concluded that the species is no longer present, if it ever was, in Australia and that the specimens supposedly from Australia are, in all probability, mislabelled New Zealand specimens. The species can be omitted from the Australian list.

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